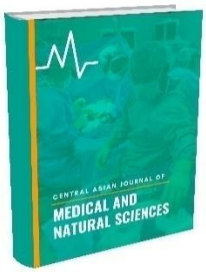
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Treatment and Prevention of Dental Deformities in Women in Early Menopause

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Abstract: The relationship between the deficiency of sex steroids and changes in the indicators of dental status in women has been proved. However, the dynamics of dental disorders that occur in patients immediately after surgical menopause, as well as at subsequent stages, compared with the initial state before surgical treatment, has not been fully studied.

Key words: Treatment, Women, Menopause.

In recent years, the study of mixed saliva in dentistry has been one of the priorities, due to its decisive role in maintaining oral homeostasis, high sensitivity to various influences and non-invasiveness of the method. A number of studies have proven that salivary glands change their structure and function with various fluctuations of sex steroids, which leads to qualitative changes in the composition of their secretions. This is due to the presence of estrogen receptors in the exocrinocytes of the terminal sections and cells of the excretory ducts of the salivary glands [1.3.5.7]. It is known that changes in the properties of saliva affect the condition of the hard tissues of the teeth, periodontal tissues, oral mucosa and the microbial landscape of the oral cavity.

However, to date, no studies have been conducted to determine the nature and severity of changes in the functional parameters of the salivary glands and the parameters of dental status in the early period of surgical menopause, when the female body finds itself in conditions of a sharp absolute estrogen deficiency without an adaptation phase to a new condition.

Which captures a wide age range (according to various authors, from 42 to 60 years), is characterized by a complex system of "hormonal restructuring" with a subsequent decrease in the activity of tropic hormones of the anterior pituitary gland, as well as thyroid, sex hormones, some neuropeptides, neurotransmitters, neurotransmitters and hormonal regulators of erythropoiesis, lipolysis and calcium-phosphorus exchange .

Osteopenia and osteoporosis are frequent companions of perimenopause and hypoestrogenemia. Osteoporotic changes occurring in various parts of the skeleton affect, among other things, the bone tissue of the dental system, leading to a significant increase in the frequency of periodontal diseases [2.4.6.8].

Dental pathology is often closely related to such parameters of homeostasis as the functional state of the endocrine glands, the activity of metabolic processes in the body, in particular, calcium-phosphorus metabolism. Currently, the mechanisms of development and progression of diseases of the dental system in many endocrine (diabetes mellitus, thyrotoxicosis, hypothyroidism, hypo and hyperparathyroidism, etc.) and somatic diseases are well studied. The structure of dental pathology in menopausal women is quite diverse, often represented by a severe course of diseases even in the absence of endocrine and somatic pathology [9.11.13.15.17]. One of the probable etiological factors is the low bone mineral density (MPEST) of the facial skeleton during menopause [10.12.14.16.18].

Bone tissue is a frequent complication of the menopausal period of women. (they indicate the presence of a reliable relationship between the state of the bones of the oral cavity and the state of the skeleton. In North America, Western Europe and Australia, the absence of teeth in 95 million people was combined with a sharp decrease in the BMD of the facial skeleton.

The results of a 7-year study of osteoporosis and BMD of the facial part of the skull in 457 people conducted at the University of Alabama indicate a strong and significant correlation between the BMD of the hip and lower jaw ($g = 0.78$, $p<0.001$). At the same time, an analysis of the results obtained from a third of the study participants demonstrated that the revealed relationship is clinically significant.

Periodontal diseases are one of the most common dental pathologies. The periodontal tissue complex, including the alveolar bone, is in close functional and physiological relationship with other organs and systems, sensitively reacting to changes in homeostasis. Of particular interest in this regard is the effect of osteoporotic processes on periodontal tissues.

Unlike the extracranial parts of the skeleton, where the clinical consequence of osteoporosis is a high risk of fractures, a decrease in the BMD of the jaws is manifested by periodontal diseases, a violation of the stability of teeth, or loss of bone tissue in toothless areas with partial or complete loss of teeth.

At the same time, the nature of dental pathology in postmenopausal women (premenopause, menopause and postmenopause), its structure, prevalence and clinical and diagnostic features have not been sufficiently investigated.

The oral cavity belongs to saliva as a natural liquid biological medium has a huge impact on the hard tissues of the teeth, the oral mucosa, periodontal tissues, and the microflora of the oral cavity. A number of studies have proved that salivary glands change their structure and function with various fluctuations of sexual sterols, which leads to qualitative changes in the composition of their secretions [19.21].

In addition to the fact that oral tissues are well vascularized, which means an abundant supply of hormones with the bloodstream, oral tissues have an additional source of free estrogens — the main female sex hormones contained in saliva [7.8.22]. The direct effect of estrogens on the function of the salivary glands has been proven by studies showing an increase in the rate of salivation, pH and buffer capacity, a decrease in discomfort in the oral cavity and contamination with lactobacilli when using hormone replacement therapy in women with natural menopause [20.21].

Estrogen deficiency during menopause has the same significant effect on the tissues of the oral cavity as on other organs and systems of the female body, due to the presence of specific nuclear estrogen receptors in the basal layer of the gum epithelium, periodontal ligament fibroblasts, endotheliocytes of periodontal vessels and oral mucosa, alveolar and jawbone cells, acinus cells and ducts of the salivary glands, tissues of the temporomandibular joints [19.20.21.22].

Changes in dental status occurring with estrogen deficiency in women with natural menopause, which is usually a smooth, genetically programmed process with its inherent adaptation mechanisms, have

been studied previously [8,]. Surgical menopause, which is a one-time complete shutdown of ovarian function, is the strongest biological stress for the body. Absolute and sudden deficiency of female sex hormones leads to maladaptation in the neuroendocrine system. The symptoms that develop in this case are more pronounced than in natural menopause [17.18].

Changes in the dental status and function of the salivary glands during hypoestrogenism resulting from surgical menopause remain poorly understood, and there is practically no data describing the processes in dynamics in the early stages after surgery. At the same time, the increase in the number of gynecological operations leading to a total shutdown of ovarian function and the progressive development of medicine aimed at preventing the development of pathological processes determine the high need to study this issue in order to predict and prevent complications from the sides.

Surgical menopause is understood as the state of artificial termination of menstrual function in a woman at any age due to surgical removal of the ovaries (ovariectomy), removal of the uterus (hysterectomy) with the preservation of one / both ovaries or part of the ovaries after their resection.

Natural (age-related) menopause develops as a result of the attenuation of ovarian functions and in the vast majority of women occurs at 45-55 years. Before the onset of age-related menopause, women gradually decrease for several years, and after that the production of sex hormones and the maturation of eggs completely subsides. This is called the "transition" period. First of all, the release of female sex hormones (estrogens and progesterone) is weakened, while the production of small amounts of male sex hormones (androgens) is preserved, with the help of which the female body can adapt to the changes that occur.

Surgical menopause pathogenetically differs from natural menopause by simultaneous complete cessation of ovarian function. This leads to the development of postovariectomy syndrome in 75-90% of women within a few days after surgery, which is characterized by the clinical picture of menopause (hot flashes and night sweats, tearfulness, sleep disorders, tachycardia, headache, depression) [15.16.19].

Hormonal deficiency, against which metabolic and neurovegetative disorders develop, affects the state of women's health and quality of life in general. Vasomotor manifestations are eventually joined by urogenital disorders (itching, burning, dryness and hyperemia of the mucous membrane, dyspareunia, urinary incontinence), osteoporosis with minor traumatic fractures and diseases of the cardiovascular system (CCC), which include heart attack, arterial hypertension, myocardiodystroia [6]. The positive effect of estrogens on the part of the CCC is carried out by their effect on the lipid profile of the blood, on the hemostasis system and vascular walls, therefore, after the development of menopause, the level of total cholesterol (CS), the concentration of atherogenic forms of lipoproteins (LDL and VLDL) increases [5]. Since the onset of menopause, bone resorption increases, which entails a decrease in bone mass, which is why the age of the beginning of menopause occupies a significant place. In particular, surgical menopause, which occurred in young women, will lead to osteoporosis faster, since initially the bone tissue began to break down from a low initial level [7].

Other extragenital functions of estrogens are also lost, such as the regulation of the function of mammary glands, skin, hair and nails [6]. With hormonal deficiency, dryness and flabbiness of the skin develop, hair loss and thinning, brittle nails, deterioration of the gums. The loss of androgens synthesized by the ovarian stroma leads to a weakening or total loss of libido, which for young women turns out to be a significant complication. Operated women lose their sense of their own sexual attractiveness and femininity.

Atrophic vaginitis does not prevent previously asymptomatic infections such as chlamydia, ureaplasmosis, genital herpes, mycoplasmosis from manifesting. Metabolic disorders include changes in lipid balance, which can lead to obesity, hyperclycemia and hyperlipidemia. All of the above

symptoms of post-varictomy syndrome occur in a known chronological sequence, despite the fact that the severity of these symptoms largely depends on individual characteristics. So, initially, operated women develop neurovegetative disorders, then metabolic-endocrine and psychoemotional.

According to foreign and domestic sources, in half (51%) of women, postovariectomy syndrome is severe, in 32% it is moderate, and in 17% it has a mild course. The severity of the course depends on the presence of concomitant chronic diseases, so in relatively healthy women, postovariectomy syndrome occurs in a mild form and has a shorter duration. Treatment and prevention of periodontal diseases remain one of the urgent problems of modern dentistry, since the prevalence of this pathology is steadily increasing. For a specialist, the identification of periodontal pathology is not difficult, especially in the developed stage of the disease. At the same time, determining the nature of the clinical course, differential diagnosis of nosological forms of periodontal lesions, prognosis of the disease, identification of its relationship with the general condition of the patient and with changes in the dental alveolar complex and the bone system as a whole is a more complex task that requires further close study [1.9].

Clinical observations have long established a combination of cardiovascular pathology, rheumatism, diabetes mellitus, gastric and duodenal ulcers with various forms of periodontitis. Sometimes periodontitis is a harbinger of the development of diabetes mellitus, hypertension, atherosclerosis. This is probably caused by the close functional and physiological relationship of the periodontal with the cardiovascular, central nervous, endocrine systems, and gastrointestinal tract, which is manifested by the corresponding pathogenetic cause-and-effect relationships [5, 6].

In the analyzed literature data, dentists are showing increasing attention to the problem of osteoporosis. Studies of the relationship of mineral metabolism disorders with diseases of the dental system, although numerous, but their results are quite contradictory, which determines the need for additional study and detailed analysis of this problem using modern research methods. Currently, we can only say with confidence that with a decrease in the mineralization of the skeleton, pathological changes in the periodontium increase, however, there is no convincing data in the literature on the relationship between the severity of osteoporosis of the axial skeleton and the degree of periodontal lesion, which determined the need and relevance of studying this problem.

In this regard, the purpose of this study is to study the state of the dental system in women with varying degrees of skeletal mineralization in the postmenopausal period.

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